

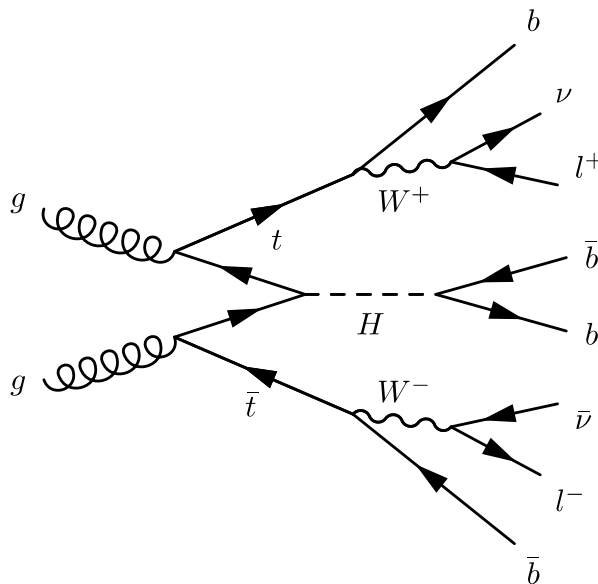
ttH at the LHC (J.Bouffard, S. Guindon, V. Jain – SUNY Albany)

- SM Higgs has largest coupling to top quark
 - Need to measure it explicitly
- tt pairs “decay” into semi-leptonic, dileptonic and all-hadronic final states
 - Dominant backgrounds are different in different final states
 - In ttH (via dileptons), signal is very clean, but **tt+bb** is the dominant (irreducible) background

» Use multivariate techniques to discriminate

Sig. & Bkgd. Understanding this background will be useful for the all-hadronic and semi-leptonic final states

H → WW is also considered



Top Pair Decay Channels

	electron+jets	muon+jets	tau+jets	all-hadronic	
$c\bar{s}$					
$u\bar{d}$					
τ^+	$e\tau$	$\mu\tau$	$\tau\tau$	tau+jets	
μ^+	$e\mu$	$\mu\mu$		muon+jets	
e^+	ee	$e\mu$	$e\tau$	electron+jets	
W decay	e^+	μ^+	τ^+	$u\bar{d}$	$c\bar{s}$